

WHAT IS CLAIMED IS:

1. A bracelet assembly for moving sensor modules around a pipe, comprising:

5 a frame adapted for installation around the pipe, the frame having a circular shape and a pair of circular members spaced apart from each other;

supports adapted to receive the sensor modules;

a sliding arrangement slideably mounted onto the frame and guiding a displacement of the supports in periphery of the pipe, the sliding arrangement comprising attachments spaced apart from one another and receiving the supports in periphery of the pipe, the sliding arrangement comprising a slideable member to which the supports are attached, and a guide member extending on the frame and slideably receiving the slideable member for sliding along a predetermined sliding range of the peripheral course, the guide member being provided on one of the circular members, the slideable member having an arc shape and extending between the circular members, one of the guide member and the slideable member having elongated grooves extending concentrically with respect to the peripheral course, the other of the guide member and the slideable member having pins engaging in the grooves;

20 a first driving means for controllably driving the sliding arrangement and thereby displacing the supports in periphery of the pipe at desired operating positions;

biasing means for biasing the sensor modules against the pipe;

25 wheel arrangements distributed around the frame and projecting therefrom for engagement with the pipe and displacement of the frame along an axial direction of the pipe; and

a second driving means for controllably driving the wheels in rotation and thereby displacing the frame along the axial direction of the pipe at a desired operating position.

30 2. The bracelet assembly according to claim 1, wherein:

the slideable member has a pair of curved arms spaced from one another and extending between the circular members of the frame, the pins projecting from the curved arms, the grooves extending on opposite sides of the circular arms and facing one another.

5 3. The bracelet assembly according to claim 2, wherein:
each of the supports comprises an elongated connecting rod
mounted to the curved arms and extending substantially transversally between
the curved arms, the connecting rod has opposed ends projecting from the
curved arms and engaging in the grooves.

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4. The bracelet assembly according to claim 1, wherein:
the slideable member has an elongated rack extending along a
length thereof; and

15 the first driving means has a driving pinion mounted onto the frame
and engaging with the rack so that the pinion and the rack form a rack-and-
pinion gear operable for producing a reciprocating motion of the sensor modules
along the peripheral course.

20 5. The bracelet assembly according to claim 1, wherein:
the sensor modules comprise ultrasonic transducers and wedges
having bottom surfaces matching an outer peripheral surface of the pipe and
surfaces receiving the transducers at a predetermined angle with respect to the
peripheral surface of the pipe, the wedges being pivotally attached to the
supports.

25 6. The bracelet assembly according to claim 5, wherein each sensor
module comprises two wedge and ultrasonic transducers assemblies pivotably
mounted next to each other along the peripheral course around the pipe.

7. The bracelet assembly according to claim 5, wherein each support comprises a pair of arms operatively connected to the sliding arrangement and between which one of the sensor modules is pivotally mounted.

5 8. The bracelet assembly according to claim 6, wherein each support comprises a pair of arms operatively connected to the sliding arrangement and between which the two wedge and ultrasonic transducer assemblies are pivotally mounted.

10 9. The bracelet assembly according to claim 8, wherein the biasing means comprises a return spring element extending between each wedge of the two wedge and ultrasonic transducer assemblies at a lower level than a pivot point of the wedges.

15 10. The bracelet assembly according to claim 1, wherein the supports respectively comprise reciprocating arrangements coupled to the first driving means and guided by the sliding arrangement for oscillation along the peripheral course.

11. The bracelet assembly according to claim 10, wherein:
the first driving means comprises rotating shafts mounted in the frame; and

20 the supports have ends provided with connecting rods pivotably attached to the rotating shafts and producing reciprocating motions of the supports.

12. The bracelet assembly according to claim 1, wherein:
the slideable member extends on a front side of the frame around the pipe; and
25 the supports project from the slideable member away from the front side of the frame.

13. The bracelet assembly according to claim 12, wherein:

each support comprises a mounting bracket removably mounted to the slideable member; and

the slideable member has receiving surfaces extending along a length thereof, the mounting brackets being fastened to the receiving surfaces.

5 14. The bracelet assembly according to claim 13, wherein the receiving surfaces are extending on a front side of the slideable member around the pipe.

15. The bracelet assembly according to claim 12, wherein:

the supports comprise pair of arms pivotally mounted to the mounting brackets and between which the sensor modules extend; and

10 the biasing means comprises torsion springs extending between the mounting brackets and the pair of arms.

16. The bracelet assembly according to claim 1, wherein the wheel arrangements comprise magnetized wheels.